

Appl. No : 10/644,443
Filed : August 19, 2003

AMENDMENTS TO THE CLAIMS

The claims as listed below will replace all prior listings and presentations of claims in the above-identified application.

1. (CURRENTLY AMENDED) A resistive structure, comprising:
 - a diffusion-resistant aluminum conductive layer; and
 - a resistor layer over said conductive layer, wherein said resistor layer comprises nitrogen and phosphorus-doped amorphous silicon comprising between about 5 and 15 atomic percent nitrogen, and about 1×10^{20} to 5×10^{20} atoms/cm³ phosphorus to reduce diffusion out of the resistor layer into the aluminum conductive layer.
2. (ORIGINAL) The resistive structure of Claim 1, further comprising a chromium layer between the aluminum layer and the resistor layer.
3. (ORIGINAL) The resistive structure of Claim 1, wherein the conductive layer has a thickness of between about 2,000 and 2,500 Å.
4. (ORIGINAL) The resistive structure of Claim 1, wherein the resistor layer has a thickness of between about 2,000 and 7,500 Å.
5. (CURRENTLY AMENDED) A field emission display device, comprising:
 - a substrate;
 - a diffusion-resistant conductive bi-layer over the substrate;
 - an amorphous silicon resistor layer over the conductive layer, the resistor layer being doped with nitrogen and phosphorus in concentrations sufficient to prevent diffusion of silicon out of the resistor layer;
 - a dielectric layer over the resistor layer; and
 - a gate electrode over the dielectric layer, the gate electrode including a gate conductive layer.
6. (ORIGINAL) The field emission display device of Claim 5, wherein the resistor layer has a nitrogen concentration of between about 5 and 15 atomic percent.

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7. (CURRENTLY AMENDED) The field emission display device of Claim 5, wherein the resistor layer comprises about 1×10^{20} to 5×10^{20} atoms/cm³ phosphorus ~~the conductive layer includes a layer of aluminum~~.

8. (CURRENTLY AMENDED) The field emission display device of Claim 5, wherein the bi-layer comprises a chromium layer and an aluminum alloy layer ~~7, wherein the conductive layer further includes a layer of chromium formed over the layer of aluminum to prevent diffusion between the aluminum layer and the amorphous silicon layer~~.

9. (CANCELED)

10. (CURRENTLY AMENDED) A field emission display device, comprising:

a substrate;

a diffusion-resistant conductive layer over the substrate;

an amorphous silicon resistor layer over the conductive layer, the resistor layer being doped with nitrogen and phosphorus;

a dielectric layer over the resistor layer; and

a gate electrode over the dielectric layer, the gate electrode including a gate conductive layer;

The field emission display device of Claim 9, wherein the resistor layer has a nitrogen concentration of between about 5 and 15 atomic percent and about 1×10^{20} to 5×10^{20} atoms/cm³ phosphorus.

11. (CANCELED)

12. (CANCELED)

13. (CURRENTLY AMENDED) The resistive structure of Claim 11, wherein the conductive layer has a thickness of between about 2,000 and 2,500 Å.

14. (CURRENTLY AMENDED) The resistive structure of Claim 11, wherein the resistor layer has a thickness of between about 2,000 and 7,500 Å.